

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
ETC Annual Reports and Certifications)	WC Docket No. 14-58
)	
Rural Broadband Experiments)	WC Docket No. 14-259
)	

PETITION FOR CLARIFICATION OR RECONSIDERATION

ADTRAN, Inc. (“ADTRAN”) welcomes the Commission’s recent decision adopting rules to address the competitive bidding process for Phase II of the Connect America Fund (“CAF”) broadband deployment subsidy program.¹ ADTRAN participated in this proceeding, and applauds the Commission for adopting technology-neutral rules as ADTRAN had advocated.² The subsidies that will be awarded pursuant to this program should help speed the deployment of robust broadband service to unserved areas in the price cap regions of the United States.

There is, however, one aspect in which the *CAF Auction Order* is not entirely clear, and which could impair the Commission’s goal of deploying high-quality broadband services that will meet the needs of consumers. In creating the differing service tiers, the Commission allows the applicants to designate whether they will meet the low latency or high latency performance

¹ *Connect America Fund*, FCC 16-64, released May 26, 2016 (hereafter cited as “*CAF Auction Order*”), published in the Federal Register on June 21, 2016 (81 *Fed Reg* 40235).

² *CAF Auction Order* at n. 36.

levels.³ And where the applicant selects the high latency option, it must meet a two-part standard: (1) a requirement that 95 percent or more of all peak period measurements of network round trip latency are at or below 750 milliseconds, and (2) with respect to voice performance, a requirement that high latency bidders be able to demonstrate a score of four or higher using the Mean Opinion Score (MOS).⁴

ADTRAN is concerned because the Commission indicates that “[b]idders committing to provide a MOS of four or higher should be prepared to submit laboratory testing consistent with International Telecommunication Union recommendations P.800.”⁵ However, as ADTRAN had explained previously, the referenced ITU standard – ITU-T Recommendation P.800 -- includes both Conversation-opinion tests and Listening-opinion tests.⁶ In the latter set of tests, conversational quality is not included in the analyses, because the test subjects listen to a prerecorded set of messages in a sound booth and evaluate the quality of those pre-recorded messages. Thus, for at least some forms of MOS testing under the referenced standard, the quality of a two-way telephone conversation is not accounted for. As the ITU Recommendation observes:

Results of listening-only tests can be applied, but only with certain reservations, to the prediction of the assessment for conversation conducted over a two-way system, such as a connection in a public switched telephone network. The provisos are that the effects of the following additional factors are duly taken into account:

³ *CAF Auction Order* at ¶¶ 28-37.

⁴ *CAF Auction Order* at ¶ 30.

⁵ *CAF Auction Order* at n. 62 (referencing International Telecommunication Union, Telecommunication Standardization Sector, Series P: Telephone Transmission Quality, Methods for objective and subjective assessment of quality, P.800 (Aug. 1996)).

⁶ *See*, Letter from Stephen L. Goodman, Counsel to ADTRAN, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, et al. (filed December 30, 2015).

- talking degradations (*e.g.* sidetone and echo);
- conversation degradations (*e.g.* propagation time and mutilation of speech by the action of voice-operated devices).⁷

Thus, ADTRAN seeks clarification that if an applicant will be selecting the high-latency option, the applicant must be prepared to demonstrate that its service meets the MOS score of four or higher under ITU-T Recommendation P.800 using the Conversational-opinion tests (and not the Listening-opinion tests). Alternatively, if the Commission had intended to allow an applicant to demonstrate compliance with the requirement of an MOS score of four or higher using either the conversational or listening test, ADTRAN seeks reconsideration of that decision.

As the Commission recognizes, the subsidized service must be capable of supporting both voice and broadband services.⁸ Indeed, the Commission made this very clear when discussing the option of a high-latency service: “For those providers offering high latency services, we emphasize the importance of providing quality voice services.”⁹ But as explained above, the Listening-opinion tests do not provide an assurance of a high-quality voice service, because they do not measure the quality of a two-way conversation. It would run counter to the universal service goals of the Communications Act and disserve the public interest for the Commission to subsidize a broadband service that does not support quality voice services. Moreover, one of the satellite broadband proponents that had advocated use of the MOS score accepted the need for Conversational-opinion testing:

To the extent that concerns may exist about using recorded messages to establish

⁷ ITU-T Recommendation P.800, “Methods for Subjective Determination of Transmission Quality,” (August, 1996), available at <http://www.itu.int/rec/T-REC-P.800-199608-I/en>, at p. 4.

⁸ *E.g.*, *CAF Auction Order* at ¶ 4.

⁹ *CAF Auction Order* at ¶ 30.

compliance with a MOS metric, *see* Letter from ADTRAN, Inc. to FCC, WC Docket No. 10-90 (Dec. 30, 2015), ViaSat has no objection to the Commission’s clarifying that MOS must be established based on “live” communications.¹⁰

ADTRAN thus requests that the Commission clarify, or if necessary reconsider the *CAF Auction Order*, to specify that an applicant choosing the high-latency option be able to demonstrate an MOS score of four or better using the Conversation-listening tests under ITU-T Recommendation P.800. Such a decision would ensure that the subsidized services can support high-quality voice services, and thus well serve the public interest.

Respectfully submitted,
ADTRAN, Inc.

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¹⁰ *See*, Letter from John P. Janka, Counsel to ViaSat, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 *et al.*, at n. 5 (filed Feb 2, 2016).